

What is claimed is:

1. A method of manufacturing a semiconductor device comprising the steps of:

(a) forming a resin layer over a surface of a semiconductor wafer on which a plurality of semiconductor elements are formed;

(b) forming a through-hole on the resin layer;

(c) first cutting where one of the wafer and the resin layer is cut;

(d) mounting a conductive ball on the through-hole, and connecting the conductive ball with an electrode of the semiconductor element;

(e) second cutting where the wafer is divided into each piece of a semiconductor device.

2. The method of manufacturing the semiconductor device of claim 1 wherein the through-hole is formed by laser irradiation.

3. The method of manufacturing the semiconductor device of claim 1 wherein the first cutting of the resin layer and the through-hole forming are performed by laser irradiation.

4. The method of manufacturing the semiconductor device of claim 3 wherein the first cutting of the resin layer and forming the through-hole are processed in one process step.

5. The method of manufacturing the semiconductor device of claim 1 wherein the conductive ball and the electrode of the semiconductor element is connected by soldering.

6. The method of manufacturing the semiconductor device of claim 1 wherein the conductive ball is a solder ball.

5 7. The method of manufacturing the semiconductor device of claim 1 wherein the first cutting of the semiconductor wafer comprises steps of grinding a wafer surface having no semiconductor elements thereon and forming grooves on the ground surface.

10 8. The method of manufacturing the semiconductor device of claim 1 wherein the first cutting of the semiconductor wafer comprises steps of forming grooves on a wafer surface on which the semiconductor elements are formed and grinding a wafer surface without the grooves.